

ABSTRACT OF THE DISCLOSURE

Conformable skin elements provide active vortex control. The skin element is mounted on a surface and acts like a pressure transducer and flow modifier. A micro-processor is coupled to the skin element and a feedback loop for controlling activation of the skin-element corresponding to surface pressures detected on the skin element. Additional pressure transducers may be provided for communicating with the feedback loop. These may include surface mounted taps or manometers and the like. Wires connect the skin elements, the feedback loop, and the micro-processor for conducting voltage to the skin elements and for transmitting pressure signals from the skin element via the feedback loop to the micro-processor. The skin element may be mounted on the surface by any known mounting system. Perimeter mounts on the skin element allow bulge deflection while cantilevered mounts allow cantilever deflection of the skin element. Aerodynamic forebody surfaces have the skin elements mounted circumferentially about a tip of the forebody. There may be one or more skin elements mounted according to the desired function. The skin elements may be of any shape.